



40PCT/EP 03/1 08669 #2
Rec'd PCT/PTO 03 FEB 2005



INVESTOR IN PEOPLE

The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

PRIORITY DOCUMENT

SUBMITTED OR TRANSMITTED IN
COMPLIANCE WITH RULE 17.1(a) OR (b)

REC'D 24 OCT 2003

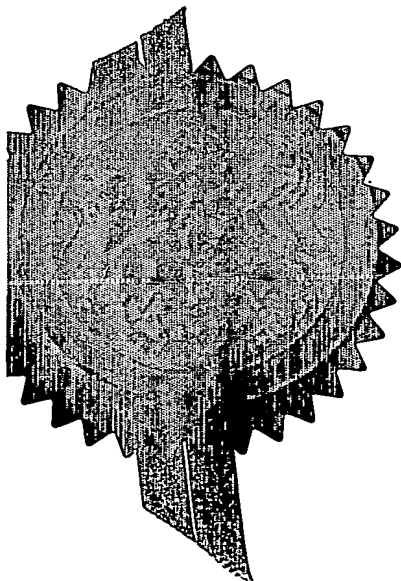
WIPO PCT

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.



Signed

L. Mahoney

Dated

25 June 2003

06 AUG 2002

Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road
Newport
Gwent NP10 8QQ

06 AUG 2002

1.	Your reference	4-32607P1		
2.	Patent application number (The Patent Office will fill in)	0218244.2		07AUG02 E739018-3 D00524 P01/7700 0.00-0218244.2
3.	Full name, address and postcode of the or of each applicant (underline all surnames)	NOVARTIS AG LICHTSTRASSE 35 4056 BASEL SWITZERLAND		
	Patent ADP number (if you know it)			
	If the applicant is a corporate body, give the country/state of its incorporation	SWITZERLAND		
4.	Title of invention	Organic compounds		
5.	Name of your agent (If you have one)	B.A. YORKE & CO.		
	"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)	CHARTERED PATENT AGENTS COOMB HOUSE, 7 ST. JOHN'S ROAD ISLEWORTH MIDDLESEX TW7 6NH		
	Patents ADP number (if you know it)	1800001		
6.	If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number	Country	Priority application number (if you know it)	Date of filing (day/month/year)
7.	If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application	Date of filing (day/month/year)	
8.	Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:	Yes		
	a) any applicant named in part 3 is not an inventor, or			
	b) there is an inventor who is not named as an applicant, or			
	c) any named applicant is a corporate body.			
	(see note (d))			

07125481005

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description 3

Claim(s) 1

Abstract 1

Drawing(s)

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (*Patents Form 7/77*)

Request for preliminary examination and search (*Patents Form 9/77*) ONE

Request for substantive examination (*Patents Form 10/77*)

Any other documents
(please specify)

11.

I/We request the grant of a patent on the basis of this application

Signature

Date

B. A. Yorke & Co.

B.A. Yorke & Co.

06 August 2002

12. Name and daytime telephone number of person to contact in the United Kingdom

Mrs. E. Cheetham
020 8560 5847

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

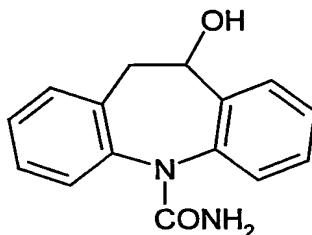
Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

Organic Compounds

The present invention relates to new pharmaceutical uses of a carbamazepine derivative.

More particularly the present invention relates to new pharmaceutical uses for the carbamazepine derivative of formula I



and their pharmaceutically acceptable salts, hereafter referred to as "the compound".

MHD (10-hydroxy-10,11-dihydro-carbamazepine), the main metabolite of the antiepileptic oxcarbazepine (Trileptal[®]) is well known from the literature [see for example Schuetz H. et al., Xenobiotica (GB), 16(8), 769-778 (1986)] and can be prepared synthetically starting from oxcarbazepine according to conventional methods. Monohydroxycarbamazepine has been first disclosed in GB 1310120. The compound is indicated to be suitable for the treatment of psychosomatic disturbances, epilepsy, trigeminal neuralgia and cerebral spasticity.

In accordance with the present invention, it has now surprisingly been found that the compound of formula I in free base or acid addition salt is also useful in the prevention and treatment of tinnitus and other inner ear/cochlear excitability related diseases such as neuronal loss, hearing loss, sudden deafness, vertigo or Meniere's disease.

The activity in tinnitus of the compound is indicated in standard tests, e.g. in the salicylate-induced tinnitus model.

It has been demonstrated [C.A. Bauer et al., Hearing Research 147 (2000) 175-182] that chronic salicylate exposure causes upregulation of glutamic acid decarboxylase (GAD) expression in the rat inferior colliculus (IC), associated with the development of tinnitus. Furthermore, electrophysiological recordings from auditory neurons using patch clamp recording techniques [D. Peruzzi et al. Neuroscience 101 (2000) 403-416, X. Lin et al.,

Journal of Neurophysiology 79 (1998) 2503-2512] and single neuron recordings [J.J. Eggermont and M. Kenmochi, Hearing Research 117 (1998) 149-160] showed that the excitability of neurons is changed following salicylate and quinine treatment.

Administration of salicylate or quinine caused an increase in the firing rate auditory neurons measured by extracellular electrophysiological recording techniques. Using in vitro electrophysiological recording techniques superfusion with salicylate increases the excitability of the recorded neurons. On administration of the compounds at concentrations of about 1nM to 300 μ M, the effects of salicylate were reversed.

For the treatment of tinnitus, appropriate dosage will of course vary depending upon, for example, the compound employed, the host, the mode of administration and the nature and severity of the condition being treated. However, in general, satisfactory results in animals are indicated to be obtained at a daily dosage of from about 1 to about 300 mg/kg animal body weight. In larger mammals, for example humans, an indicated daily dosage is in the range from about 10 to about 3000 mg of a compound according to the invention, conveniently administered, for example, in divided doses up to four times a day.

The compounds may be administered in any usual manner, e.g. orally, for example in the form of tablets or capsules, or parenterally, for example in the form of injection solutions or suspensions.

The present invention also provides pharmaceutical compositions comprising the compounds in association with at least one pharmaceutical carrier or diluent for use in the treatment of tinnitus. Such compositions may be manufactured in conventional manner.

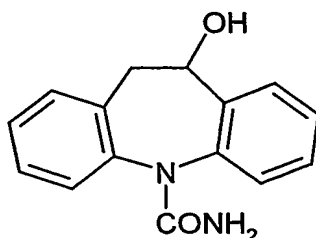
Unit dosage forms may contain for example from about 2.5 mg to about 1000 mg of the compound.

The invention further provides the use of a compound according to the invention for the manufacture of a pharmaceutical composition for the treatment of tinnitus and other inner ear/cochlear excitability related diseases such as neuronal loss, hearing loss, sudden deafness, vertigo or Meniere's disease.

The invention further provides a method for the treatment of tinnitus and other inner ear/cochlear excitability related diseases such as neuronal loss, hearing loss, sudden deafness, vertigo or Meniere's disease in a subject in need of such treatment, which comprises administering to said subject a therapeutically effective amount of a compound according to the invention.

CLAIMS

1. The use of a compound of formula I



I

- and their pharmaceutically acceptable salts, for the treatment of tinnitus.
2. A pharmaceutical composition which incorporates as active agent a compound of formula I according to claim 1 in free or pharmaceutically acceptable salt form, for use in the treatment of tinnitus and other inner ear/cochlear excitability related diseases such as neuronal loss, hearing loss, sudden deafness, vertigo or Meniere's disease.
 3. The use of a compound of formula I according to claim 1, in free or pharmaceutically acceptable salt form, for the manufacture of a pharmaceutical composition for the treatment of tinnitus and other inner ear/cochlear excitability related diseases such as neuronal loss, hearing loss, sudden deafness, vertigo or Meniere's disease.
 4. A method for the treatment of tinnitus and other inner ear/cochlear excitability related diseases such as neuronal loss, hearing loss, sudden deafness, vertigo or Meniere's disease in a subject in need of such treatment, which comprises administering to said subject a therapeutically effective amount of a compound of formula I according to claim 1 in free or pharmaceutically acceptable salt form.

Abstract:

The present invention relates to the use of a carbamazepine derivative in treating tinnitus.